



ACE45561P

25V/1A, Single Li-ion Battery Linear

Description

The ACE45561P is a complete constant-current/ constant voltage linear charger for single Lithium-Ion battery with high input voltage rating and large current. The largest input voltage is up to 25V and charge current is up to 1A. The input over voltage protection thread is 6.8V and the lowest input voltage is 3.75V, which can meet the requirement of voltage-adjustment to reduce charging power consumption and improve overall efficiency.

Thermal feedback regulates the charge current to limit the die temperature during high power operation or high ambient temperature. The charge voltage is fixed at 4.0V/4.1V/4.15V/4.2V/4.35V/4.4V/4.45V, and the charge current can be programmed externally with a single resistor.

The ACE45561P automatically terminates the charge cycle when the charge current drops to 1/10 the programmed value after the final float voltage is reached.

When the input voltage (supplied by AC adapter or USB power supply) is removed, the ACE45561P automatically enters a low current state, decreasing the battery leakage current to less than 1 μ A.

Other features of ACE45561P include over temperature protection, under voltage lockout, automatic recharge and charging state indication (two LED pins to show charge state and charge-ending state).

Features

- Maximum Input Voltage Rating up to 25V
- Minimum Input Voltage: 3.75V (Typ.)
- Input Over Voltage Protection: 6.8V (Typ.)
- Maximum BAT withstand voltage up to 20V
- Battery reverse connection protection
- Programmable Charge Current up to 1A
- 1% Charge Voltage Accuracy
- 1/10C Termination Charge Current
- Float Charge Voltage: 4.0V, 4.1V, 4.15V, 4.2V, 4.35V, 4.4V, 4.45V
- Thermal Regulation to Maximize Charge Rate Without Risk of Overheating.
- Charging status and fault status indication
- Battery Temperature Monitoring.
- Chip Enable Input
- Trickle charge threshold: 2.9V (Typ., Float Voltage: 4.2V)
- Soft-start and surge current limit
- Available ESOP8, DFN2x2-8, DFN3x3-8L, DFN3x2-10, DFN3x3-10 Packages



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Applications

- Standby power supply/ portable power source
- mobile phone · PDA · GPS
- MP3 · MP4 player
- Digital camera, electronic dictionary
- Portable devices · Various charg

Absolute Maximum Ratings ^(Note)

Symbol	Items	Value	Unit	
V_{CC}	Input voltage	-0.3~25	V	
V_{BAT}	BAT voltage	-5~20	V	
V_{PIN1}	CHG/FULL /CE voltage	-0.3~25	V	
V_{PIN2}	TEMP/PROG voltage	-0.3~7	V	
I_{BAT}	BAT Pin current	1200	mA	
P_D	Maximum Power Dissipation	ESOP8	1.8	W
		DFN2x2-8	1	W
		DFN3x3-8L	1.5	W
		DFN3x2-10	1.25	W
		DFN3x3-10	1.5	W
$R_{\theta JA}$	Junction to Ambient Thermal Resistance	ESOP8	55	°C /W
		DFN2x2-8	100	°C /W
		DFN3x3-8L	67	°C /W
		DFN3x2-10	80	°C /W
		DFN3x3-10	67	°C /W
T_J	Junction Temperature	-40~150	°C	
T_A	Ambient Temperature	-40~85	°C	
T_{STG}	Storage Temperature	-55 to 150	°C	
T_{SOLDER}	Package Lead Soldering Temperature	260°C, 10s		

Note: Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Recommended Operating Condition

Symbol	Items	Min	Max	Unit
V_{CC}	Input Voltage Range	3.75	24	V
I_{BAT}	Charge Current Range	100	1000	mA
R_{PROG}	CC mode charge current programming resistor	1	10	KΩ

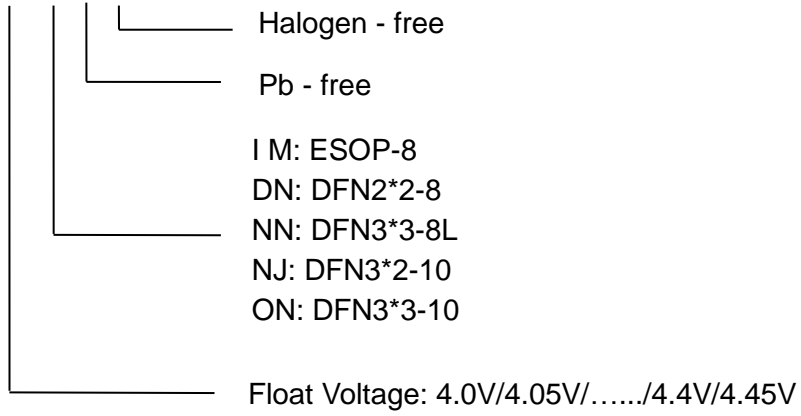


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Ordering Information

ACE45561P XX XX + H





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Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

ACE Technology Co., LTD.
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